

Work Order ID 74974

74974

Page 1

October-14-11 8:14:44 AM

Item ID: D3510-041

Accept:

N9000040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Skidtube Insert Assembly

Start Date: 10/14/11 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/21/11 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3510

Rev C

0.00

100

100

MORI SEIKI CNC LATHE LARGE

0.00

Mori Seiki

Memo

Mori Seiki CNC Lathe Large

Turn as per Dwg D3510 & Folio FA652
Ensure that DT8877A Plug fits in tube.

0.00

110

110

QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

Quality Control

4 Ø
mm. 11/10/31
4 Ø
mm. 11/10/31

W/O:		74974 WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-041 PAR #: _____ Fault Category: Machining NCR: Yes ☐ No ☒ DQA: Start Date: 11/12/12
 Resolution: Acceptable Disposition: Acceptable QA: N/C Closed: OK Date: 11/12/12

NCR: <u>11-1057</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11.11.01	16U	Chip caused groove on on I.D. Approx 4.5" from end. I.D. measures ϕ 2.960. HAS BEEN BENDED SMOOTH AS MUCH POSSIBLE	<u>CP</u> 11.11.01 <u>CP</u> 042	Acceptable. Located near end. Bending marks will be less than at end of I.D. boring	<u>M.M.L</u> 11/14/1	<u>S</u> 11/12/06	<u>CP</u> 11.11.01 <u>CP</u> 042	<u>S</u> 11/12/06
		R.C. has envelope did not clean. Process chips build upon inside of Bore.						

NOTE: Date & initial all entries

Work Order ID 74974

74974

Page 2

October-14-11 8:14:44 AM

Item ID: D3510-041

Accept

N9000040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Insert Assembly

Start Date: 10/14/11 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/21/11 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

0.00

120

HAAS CNC VERTICAL MACHINING #1

0.00

HAAS I

Memo

HAAS CNC vertical machine #1

1-Machine as per Folio FA652 and Dwg D3510

B.A 11/11/01

4 0

2-Deburr

Note:*.****.250" dia holes are to opened to finish size by skidtube dept,and missing .266" dia hole is to be drilled by skid dept.*****

130

QC2- Inspect parts off machine FAI/FAIB

0.00

130

QC

Memo

0.00

Quality Control

B.A 11/11/01

4 0

140

QC8- Inspect parts - second check

0.00

140

QC

Memo

0.00

Quality Control

B.A 11.11.2

4 0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 74974

74974

Page 3

October-14-11 8:14:44 AM

Item ID: D3510-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Insert Assembly

Start Date: 10/14/11 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/21/11 Req'd Qty: 4.00

4

Customer:

Reference:

Run Start ***NR1***

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop ***NR2***

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code Accept Reject
Qty Qty Number Insp.
Stamp

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

1-Drill .266" Dia hole using DT8877B as per Dwg D3510

2-Counter bore wearplate holes as per Dwg d3510.

3-open wearplate holes to .297 as per Dwg D3510.

4-Deburr

160

QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

Quality Control

170

Chemical Conversion Coat per QSI005 4.1

0.00

170

HandFinish

Memo

0.00

Hand Finishing

Handwritten signature and date: 11-12-5

Handwritten signature: S. W. L. G.

Handwritten mark: H.

Handwritten date: 11-12-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 74974***74974***

Page 4

Item ID: D3510-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Insert Assembly

Start Date: 10/14/11 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/21/11 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC3- Inspect Part Finish

0.00

180

QC

Memo

0.00

Quality Control

4.XD M/L 11/12/08

190

HandFinishing

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Install inserts as per Dwg D3510

AL BL 11-12-8.

200

QC5- Inspect part completeness to step on W/O

0.00

200

QC

Memo

0.00

Quality Control

8 11/12/08

(4.4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 74974

October-14-11 8:14:44 AM

74974

Page 5

Item ID: D3510-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube Insert Assembly

Start Date: 10/14/11 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/21/11 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
Code Accept Reject Reject Insp.
Qty Qty Number Stamp

210

Identify as per dwg & Stock Location: _____

0.00

210

Packaging

Memo

0.00

Packaging

220

QC21- Final Inspection - Work Order Release

0.00

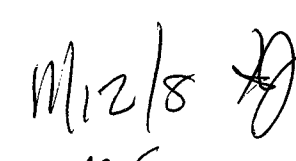
220

QC

Memo

0.00

Quality Control

11/12/08 11/12/08 
mf
11-12-08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-14-11 8:14:43 AM

Page 1

Work Order ID: 74974

Parent Item: D3510-041

Parent Item Name: Skidtube Insert Assembly

Start Date: 10/14/11

Required Date: 10/21/11

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 06-10-12 JLM
IPP Rev:B ALES-1032 and ALS4-428 insert now used ECN 1036 DD
IPP Rev:C Revised manufacturing steps for LG 08-09-29 Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS4-1032-225 Insert		Purchased	No			190	Each	2,648.0000	6	24			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST282		2648							
				108696		796							
				110768		62							
				118386		860							
				118966 ✓		930				24			
ALS4-428-165 Inserts		Purchased	No			190	Each	485.0000	2	8			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FP		467				8			
				117769 !		467							
				FP-B		18							
				114172		18							
ALS7-1032-130 Insert		Purchased	No			190	Each	1,095.0000	2	8			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST281 119530		918				8			
				118966		918							
				ST282		177							
				117717		31							
				118386		146							

BR 11-12-8.

BR 11-12-8.

BR 11-12-8.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-14-11 8:14:44 AM

Page 2

Work Order ID: 74974

Parent Item: D3510-041

Parent Item Name: Skidtube Insert Assembly

Start Date: 10/14/11

Required Date: 10/21/11

Start Qty: 4.00

Required Qty: 4.00

M6061T6T3.500W.375

Purchased

No

100

f

2.2263

2.55

10.736842

6061-T6 RD Tube 3.50 X .375 W

Location

Loc Qty

Loc Code

MAT

1.2632

118071

1.2632

MAT014

0.9631

117392

0.9631

M119410

10'

amm.L 11/10/31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 74974
Description: Skidtube Insert		Part Number: D3510-041
Inspection Dwg: D3510	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

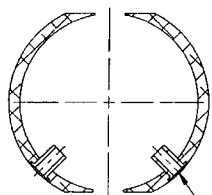
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø3.300	+/-0.010	3.299	✓		Vern	CNC-06
Ø2.900	+/-0.010	2.938	✓		"	
Ø2.750	+/-0.010	2.760	✓		"	
R0.25 x 0.066	+/-0.010	.25 x .066	✓		"	
15.00	+/-0.030	15.00	✓		tape	mm, L-02
0.063 x 45°	+/-0.010 x 0.5°	.063 x 45°	✓		Vern	CNC-06
0.125 x 45°	+/-0.010 x 0.5°	.125 x 45°	✓		"	
5.270	+/-0.010	5.280	✓		"	
3.265	+0.000/-0.010	3.260	✓		"	
30.50	+/-0.030	30.500	✓		tape	mm, L-02
9.515	+/-0.010	9.515	✓		Vern	CNC-02
6.875	+/-0.010	6.875	✓		"	"
13.750	+/-0.010	13.750	✓		Tape	GA-12
1.600	+/-0.010	1.600	✓		H-6	31006
2.165	+/-0.010	2.165	✓		Vern	GA-01
6.735	+/-0.010	6.742	✓		Vern	CNC-02
2.981	+/-0.010					
2.434	+/-0.010	N/A				
1.036	+/-0.010					
Ø0.266	+0.006/-0.001	Ø0.266	✓		Vern	GA-01
Ø0.391	+/-0.010	Ø0.393	✓		"	"
Ø0.516 x 0.100	+/-0.010	Ø0.521 x .100	✓		"	"

Measured by: mm, L	Audited by: RA	Prototype Approval:	N/A
Date: 11/10/31	Date: 11-11-2	Date:	N/A

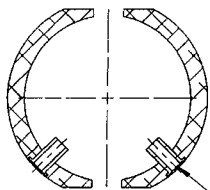
Rev	Date	Change	Revised by	Approved
A	09.06.01	New Issue	KJ	

D3510-041 SKIDTUBE INSERT



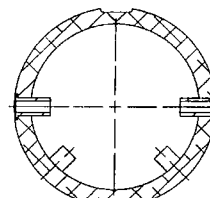
SECTION A-A

AFTER FINISH,
INSTALL AELS-1032-130
(2 PLACES)



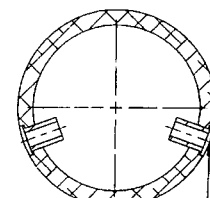
SECTION B-B

AFTER FINISH,
INSTALL AELS-1032-225
(4 PLACES)



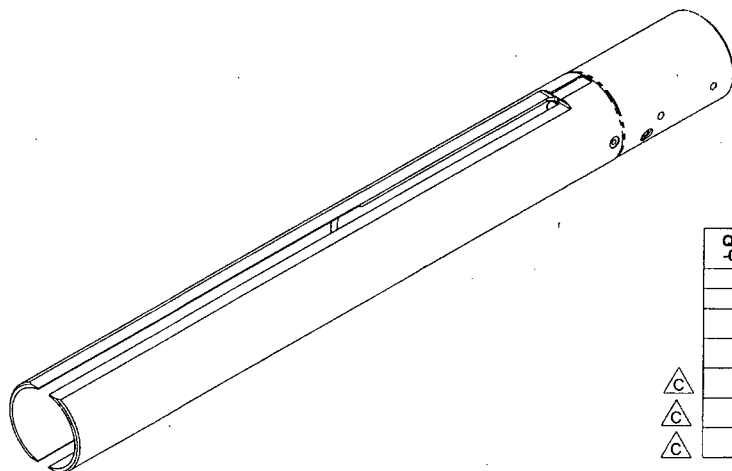
SECTION C-C

AFTER FINISH,
INSTALL AELS-1032-225
(2 PLACES)



SECTION D-D

AFTER FINISH,
INSTALL ALS4-428-165
(2 PLACES)



PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3510-041	SKIDTUBE INSERT
1	D6016-065	EXTRUSION
2	AELS-1032-130	INSERT
6	AELS-1032-225	INSERT
2	ALS4-428-165	INSERT



C	UPDATE DRAWING FORMAT AND CLARITY FOR MFG. CHANGE INSERTS FOR EASE OF INSTALLATION	PH	07.10.04
B	UPDATE DIMENSIONS	PH	06.09.20
A	NEW ISSUE	PH	06.04.21
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	07.10.04		

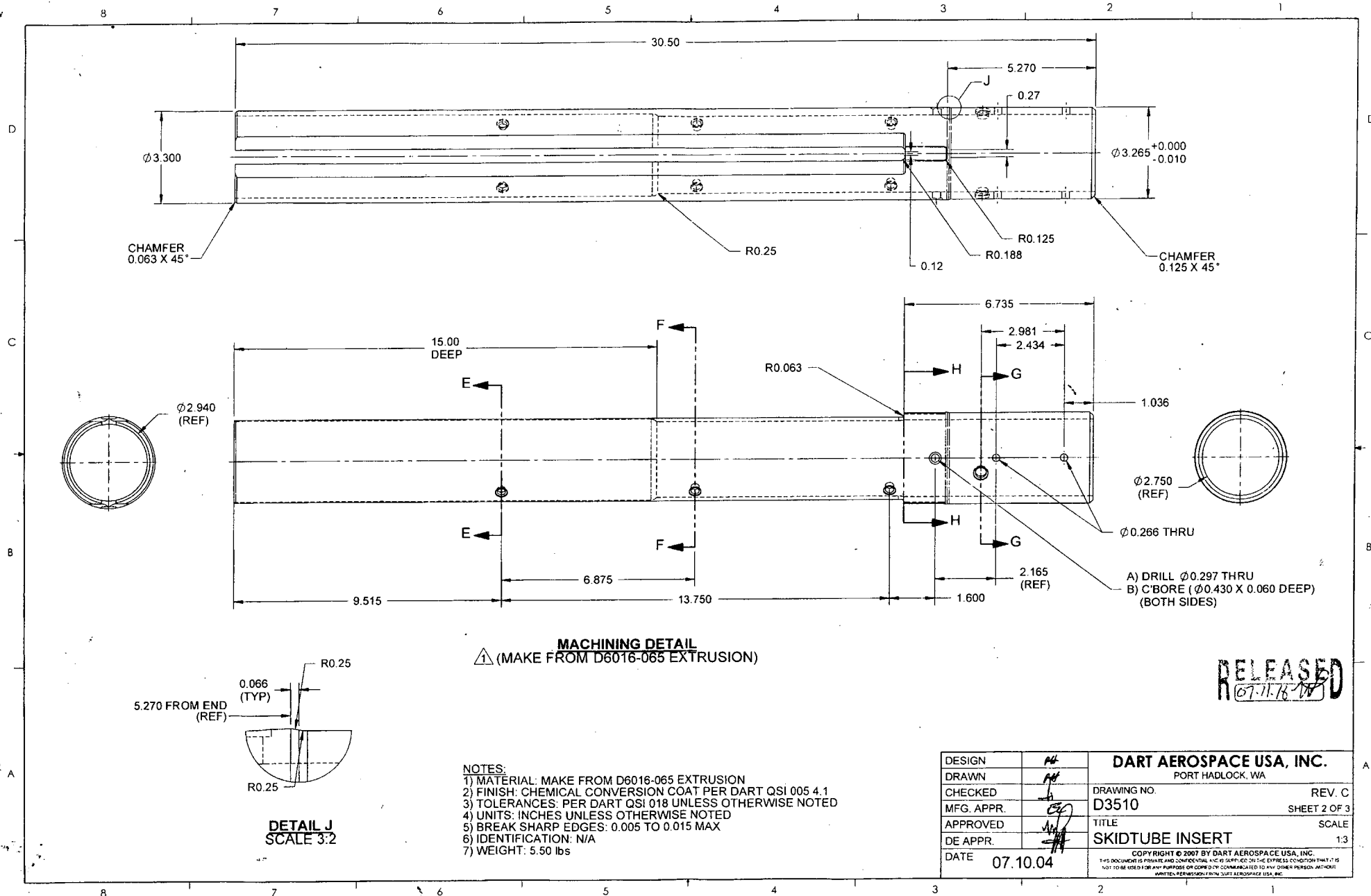
DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO.
D3510
TITLE
SKIDTUBE INSERT
REV. C
SHEET 1 OF 3
SCALE
1:3

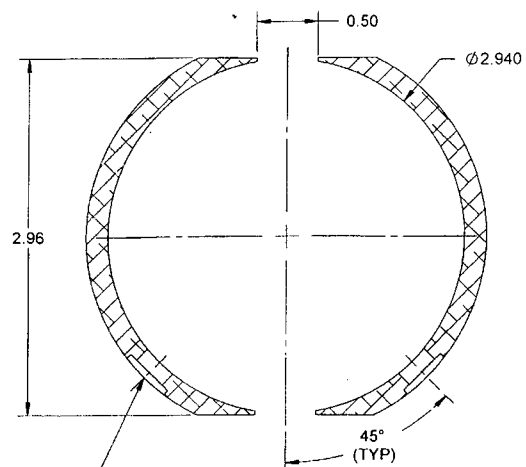
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RELEASED
07.11.16

W10740974

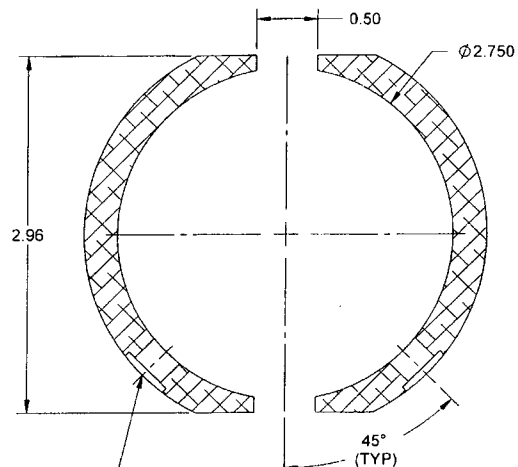


$\phi 2.960 \pm 4.5$



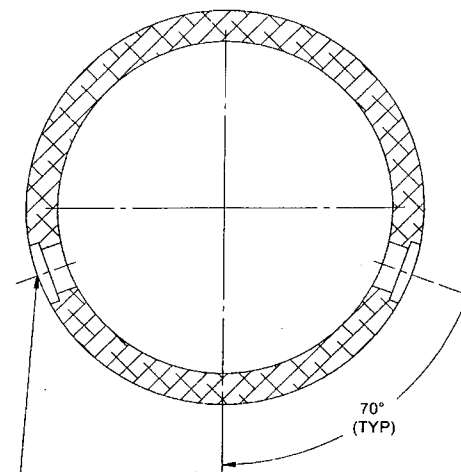
DRILL $\phi 0.297$
C'BORE ($\phi 0.430 \times 0.060$ DEEP)
(2 PLACES)

SECTION E-E



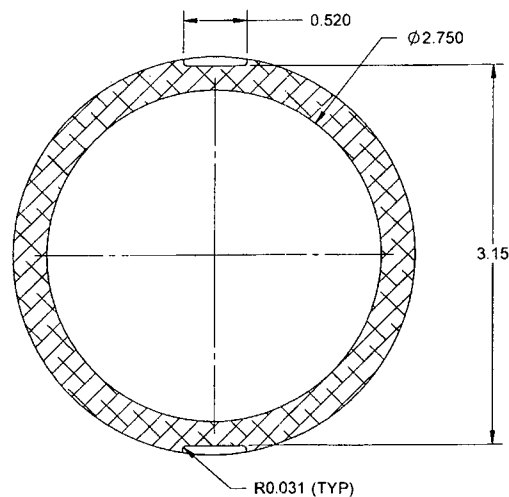
DRILL $\phi 0.297$
C'BORE ($\phi 0.430 \times 0.060$ DEEP)
(4 PLACES)

SECTION F-F



DRILL $\phi 0.391$
C'BORE ($\phi 0.516 \times 0.100$ DEEP)
(2 PLACES)

SECTION G-G



SECTION H-H

RELEASED
07-11-16

DESIGN	Per	DART AEROSPACE USA, INC.	
DRAWN	Per	PORT HADLOCK, WA	
CHECKED	Per	DRAWING NO.	REV. C
MFG. APPR.	Per	D3510	SHEET 3 OF 3
APPROVED	Per	TITLE	SCALE
DE APPR.	Per	SKIDTUBE INSERT	1:1
DATE	07.10.04	<small>COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

